Chapter I
A Qualitative Study of the Applicability of Technology Acceptance Models to Senior Mobile Phone Users

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ABSTRACT

We report on an investigation into mobile phone adoption by older users. Technology adoption is a process from ignorance to considering it a necessity. Moreover, acceptance is an essential precursor of adoption. Many models consider either acceptance or adoption, but in fact these are interrelated. Furthermore, most theoretical models are based on responses from students or economically active adults. This begs the question: Do existing models incorporate the phases and the factors that lead to mobile phone adoption and acceptance by older adults? We thus studied the needs, uses, and limitations of older users and then gathered information about experiences and opinions of these users. We then mapped the verified acceptance factors against adoption processes in a two-dimensional matrix. This led to the proposal for the novel senior technology acceptance and adoption model (STAM), which incorporates acceptance factors into the adoption process, thereby consolidating the research in both these areas.

INTRODUCTION

This chapter addresses technology acceptance and use in the context of the senior mobile phone user. These users are an oft neglected group in product development and marketing, yet in most developed societies they are the only growing age group (Mallenius et al., 2007). The uptake of new technologies has been studied from two perspectives: acceptance factors and adoption process.
Several models of technology acceptance have been proposed and tested (Lee, 2007; Venkatesh et al., 2003). In the field of Management Information Systems (MIS), a number of technology acceptance models have been proposed, which focus on factors influencing acceptance without considering the process (Renaud & Van Biljon, 2008). Sociological studies take a meta-view by considering the adoption process, including technology’s acceptance, rejection and use (Haddon, 2003). Lee (2007) suggests that different approaches be merged in order to benefit from all their strengths. In this chapter we will be merging acceptance and adoption approaches since this enhances our understanding of factors influencing progression through the different adoption phases. It is important to consider acceptance and adoption together since adoption will not occur without a person having accepted the technology – the person may own the technology, but without accepting it he or she is unlikely to adopt it. Non-adoption means that it is unlikely to be utilised effectively or upgraded. In effect, significant non-adoption by any sector of society will lead to fewer sales and therefore market research is especially interested in acceptance.

In predicting adoption, knowledge of the end users is as important as the functionality of a device (Holzinger et al., 2008). Current acceptance models have been quantitatively verified, using students or economically active adults as participants (Lee, 2007). This begs the question: Do existing models incorporate the phases and the factors that lead to mobile phone adoption and use by older adults? A literature study of the needs, limitations and expectations of the older adult mobile phone user made it clear that they demand added value in the form of a more social, active, meaningful and independent life (Mallenius et al., 2007). In terms of simple economics, the value of the phone can be expressed as value = (usefulness, ease of use). How each factor is rated depends on each person’s individual needs (perceived usefulness) and abilities (perceived ease of use) and it is difficult to come up with a definitive way of measuring these. However, knowing which factors mediate ease of use and usefulness provides an insight into perceived value. The obvious matter for investigation is whether current mobile phones generally deliver this value to elderly users. We address this by verifying, qualitatively, the factors mentioned in the quantitatively derived models, and assessing their influence in the adoption process.

Firstly, we need to identify a set of factors relevant to mobile phone acceptance. We constructed five scenarios related to senior mobile phone usage and presented these scenarios to participants in semi-structured interviews. The participants’ responses were used to validate or deny the identified factors. Furthermore we interviewed older users, asking about use of their mobile phones with a specific focus on ease of use. Our findings are presented in an acceptance matrix which maps the validated factors against the domestication technology adoption progression. This helps us to understand the factors that play a part in leading users down the road towards wholehearted adoption of a particular technology.

The next two sections present the theoretical groundwork by presenting an overview of technology acceptance and adoption research. The following section examines the context of the elderly mobile phone user. Next we outline the qualitative study and present our results. The final section proposes the adoption matrix and presents the Senior Technology Adoption and Acceptance Model (STAM) and contextualises the findings.

TECHNOLOGY ADOPTION PROCESSES

There are two primary technology adoption process models: Rogers’ innovation diffusion model (Rogers, 2003) and the domestication approach (Silverstone & Haddon, 1996). Rogers’
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